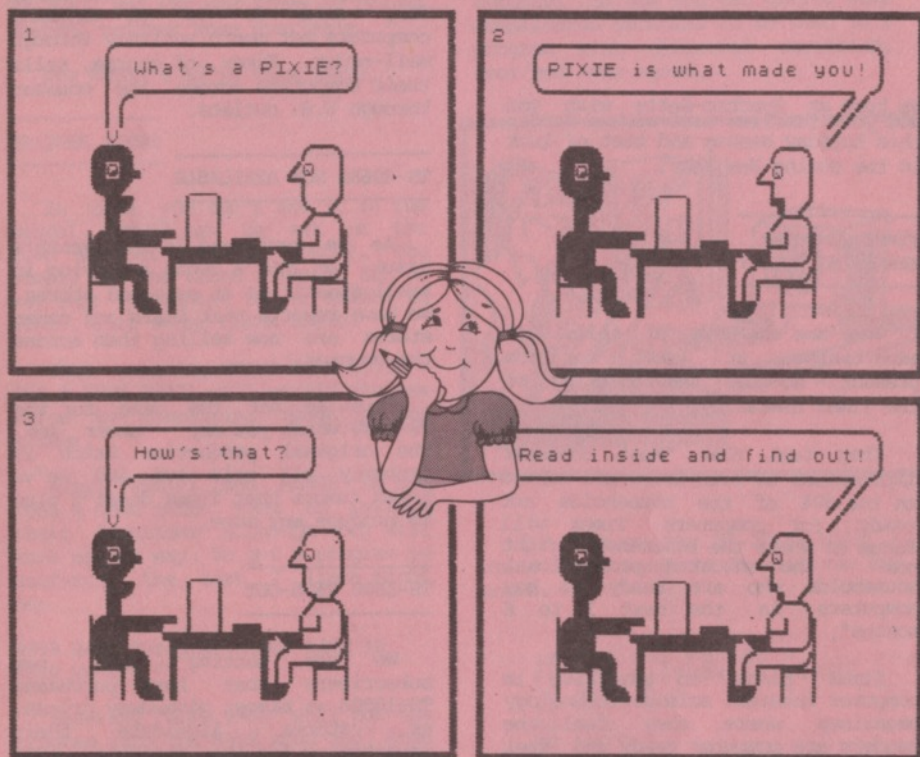


SYNCHRO—SETTE

THE SUBSCRIPTION MAGAZINE FOR YOUR MICRO COMPUTER
TIMEX — SINCLAIR



DECEMBER 1983 VOLUME 2 NUMBER 11 \$2.00

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SYNCHRO - SETTE IS PUBLISHED MONTHLY BY : THE S & S COMPANY
388 W. LAKE ST. ADDISON ILL. 60101 (312) 628-8955



Editor Ramblings

We here at Synchro-Sette wish you and your families best wishes during this holiday season and best of luck in the coming New Year.

TIMEX COMPUTER MARKETING POLICY

Gone are the days of television advertising, at least for the present - so goes the thinking of the Timex hierarchy.

They feel that "Most consumer impressions on television are wasted on the 80% of the households not ready for computers. Timex will focus on where the business is right now - the educated professional households who are ready to buy computers in the next 3 to 6 months".

Timex plans to advertise in computer interest science/technology magazines where they feel the readers are computer ready and feel these people are the "opinion leaders who set the trends for this market".

In a 3 month period, they feel they will be reaching 70% of all adults approximately 3.6 times for a total of 40.2 impressions per adult through a total circulation of 13.2 million magazines. Also, millions of teenagers will be reached in both general and teen-oriented publications.

Publications running the ads will be DISCOVER, OMNI, ROLLING STONE,

SCIENCE DIGEST, SCIENCE 83, SCIENTIFIC AMERICAN, TEEN AGE, FORBES, FORTUNE, GO and at least 20 other publications and gift catalogs. Look for an 8 page booklet in some of the larger magazines including OMNI & DISCOVER.

Sinclair owes the success of marketing the ZX-80 and ZX-81 strictly to magazine advertising. They sold 60 to 80 thousand computers per month entirely through mail-order. Timex, of course, sells their computers across the counter through U.S. outlets.

TS-2068s NOW AVAILABLE

As we mentioned in last month's issue, the 2068's began appearing in small quantities at selected stores. We have reports that Sears and other stores are now selling them across the counter.

This is not the case for the TS-1500 which you may never see. The original production batch is probably all sold out and we've heard rumors that Timex doesn't plan to produce any more.

TS-1000 FADE-OUT

We are getting some new subscribers that have purchased TS-1000s at almost give-away prices, as stores liquidate their inventories for the holidays. 1000 software is also being sold at discount. One hardware store (yes, a hardware store) in our area is selling Timex software packages, any 2 for \$5.00. A large software house that deals with national chain stores, is getting back as many as 40,000 TS-1000 software packages per month.

This, of course, is due to a combination of the availability of the TS-2068 coming over 4 months later than originally projected and the absence of advertising of Timex products during the interim period.

During that time, the market virtually collapsed.

KOPAK PAPER

A representative from Kopak called and said they have a large stock of printer paper for any kind of computer printer including the TS-2040 and the new Timex 80 column thermal printer when available.

See Kopak's ad in this issue.

TS-2068 HINTS

In case you don't see it in the manual, RAMTOP can be set on the 2068 without POKEing memory. You simply use the CLEAR command. Let us say that you wanted to set RAMTOP to 50000. Just enter CLEAR 50000.

Then entering PRINT PEEK 23730 + 256 * PEEK 23731 will verify the new value by displaying "50000" on the screen.

Also, VERIFY and MERGE do not need a name after them to perform their functions although they will work either way. To get a program to self-run, the last 2 lines might be:

```
9998 SAVE "program name" LINE 10
9999 VERIFY ""
```

Entering "GOTO 9998" will put the program into the SAVE mode and when the screen clears, it will automatically be in the VERIFY mode. Simply back the tape up and press play on the recorder and the program will be verified. VERIFY "" will verify the first program encountered and MERGE "" will merge the first program encountered with any program in memory.

TRY THIS

Enter these lines into either computer:

```
10 LET AS = "(25.7/37.8 + 82 *
.0799) **.73"
20 PRINT VAL AS
```

This format, using the VAL function, simulates the DEFN function found on most computers, but not the 1000 series.

The Old Professor is going to give a lecture in next month's tutorial on how you can define some complicated formulae to be used in a program with different variables, over and over again.



Try this on your TS-2068 with a color TV or monitor! It will run for hours.

```
10 FOR a=1 TO 255
20 FOR n=16384 TO 22527
30 POKE n,a
40 NEXT n
50 CLS
60 NEXT a
```



A "Santa Claus School" was opened in 1937 in Albion, NY to train men to play the part of Santa Claus. Six students enrolled for the one week course.



The Santa Claus we know today was first drawn in 1863 by cartoonist Thomas Nast.



Good morning, Class! How are you?
Wow! Am I stuffed! Did anyone bring
some Alka Seltzer?

Today's lesson is a continuance
of the data storing techniques
discussed in the last session. If
you recall, we were shown how we
could dedicate an area of the
computer's memory that would be
unaffected by any keyboard command
other than changing the location of
that dedicated area with a similar
command. The first memory location
that can have data entered into it
without being affected by future
keyboard commands is called RAMTOP.
For a 1K ZX-81, it is decimal
location 17408. For a 2K TS-1000, it
is 18432. For a 16K computer, it is
32768.

By the way, did you know that the
1 & 2K computers actually have less
than those amounts of memory for
your programs and variables in
available RAM? Your program starts
at location 16509. If you subtract
this number from 1K RAMTOP, you get
only 899 bytes available to you or
less than 1K of program space. The
2K machine actually has 1923 bytes
available. The available RAM
actually starts at location 16384
but from this location to 16508 are
located the system variables that
keep changing according to the
program in RAM.

Almost all manufacturers include

this and other areas of normally
unavailable memory in their
advertising as part of the RAM. The
user may find this misleading. The
TS-2068 which is touted as a 72K
machine only has 38K of user RAM
available. The Commodore 64 which is
touted as a 64K RAM machine, also
has 38K of normally available user
RAM.

Well, anyway - let us say that we
have a program that creates and
stores data for customers on a
monthly basis. Let us say that after
a year, we have 12 separate files,
one for each month.

So far, so good - but we know
that when we store this data, it is
done simply by saving the program on
tape and when the program is
reloaded back into the computer, it
is executed with a GOTO statement.
This keeps the variables intact,
whereupon RUN would destroy them.

We now run into a problem! We
cannot MERGE these monthly data
files together - or can we?

Consider the following hypothesis
- let us say that we set RAMTOP at
20000. Let us load in one of the
monthly files, for instance January.
Let us now write a routine into the
program that will POKE January's
data into memory, 10 memory
locations above RAMTOP and beyond.
After the last byte of information
is poked into the last memory
location, let us have our routine
take the address of the last memory
location used for the data and POKE
that information in memory locations
20000 to 20004.

Let us consider what we have so
far! We have data that is stored,
starting with memory location 20010
and ending with a memory location
determined by the data held in
memory locations 20000 to 20004. If
we type in NEW or load another
program, this data is still going to
be at those memory locations.

Let us say that we now load in
the February file. Only the February
data is held in the variables area

still above RAMTOP. We can merge the two month's data two different ways. We can write a routine that would PEEK those memory areas above RAMTOP and convert the data in them into new variables or we can take February's data and POKE that into memory starting with the first memory location available after the end of January's data. Again, this memory location would be determined by the data in memory locations 20000 to 20004. We then take that figure and add one to it and we have the starting point for our February data.

After February's data is POKED into memory, our routine now determines the last memory location used and again POKES that data into the memory locations from 20000 to 20004.

We now have both January and February in memory above RAMTOP. We can do this indefinitely or as long as memory holds out, until we have all the month's data stored in memory above RAMTOP. When this is done, all that remains is to pull it back into a program and utilize it as necessary, such as sorting it.

Here is a program that allows multiple files to be merged:

```

5 FAST
10 REM 16K RAMTOP NORMALLY AT
   32768 - LINES 20 AND
   30 SET RAMTOP AT 20000
20 POKE 16388,32
30 POKE 16389,78
40 PRINT "RAMTOP IS NOW ";PEEK
16388+256*PEEK 16389
50 PAUSE 40000
60 CLS
70 DIM A$(100,5)
75 LET R1=RND*10+10
80 FOR N=1 TO R1
90 FOR I=1 TO 5
100 LET A$(N,I)=CHR$(38+RND*25

110 NEXT I
120 PRINT N,A$(N)
130 NEXT N
140 PAUSE 40000
150 IF INKEY$="Z" THEN GOSUB 10
00
160 LET B$=CHR$ PEEK 20000+CHR$
PEEK 20001+CHR$ PEEK 20002+CHR$
PEEK 20003+CHR$ PEEK 20004
170 IF B$=" " THEN LET B$="
20009"
180 LET B=VAL B$+1
190 LET A=1
200 FOR N=1 TO R1

```

```

210 FOR I=1 TO 5
220 POKE B,CODE A$(N,I)
230 LET B=B+1
240 NEXT I
250 POKE B,111
260 LET B=B+1
270 NEXT N
280 LET B$=STR$(B-1)
290 FOR I=1 TO 5
300 POKE 19999+I,CODE B$(I)
310 NEXT I
320 PAUSE 40000
330 IF INKEY$="R" THEN GOTO 500
440 CLEAR
450 CLS
470 RUN
500 CLEAR
510 DIM A$(100,5)
520 LET B$=CHR$ PEEK 20000+CHR$
PEEK 20001+CHR$ PEEK 20002+CHR$
PEEK 20003+CHR$ PEEK 20004
530 LET B=20010
540 LET I=1
550 LET N=1
560 SLOW
570 IF PEEK B=111 THEN GOTO 700
580 LET A$(N,I)=CHR$ PEEK B
590 LET B=B+1
600 IF B=VAL B$+1 THEN STOP
610 LET I=I+1
620 GOTO 570
700 LET N=N+1
720 LET I=1
730 LET B=B+1
740 SCROLL
750 PRINT N-1,A$(N-1)
760 GOTO 570
1000 FOR N=1 TO R1
1010 LPRINT N,A$(N)
1020 NEXT N
1030 RETURN

```

Lines 20 to 40 are the RAMTOP routine. When the program is run, RAMTOP will be displayed. Press ENTER. A random amount (between 10 and 20) 5 character strings with random characters will be generated and displayed on the screen. Press ENTER when they are displayed. If you press "Z" instead, these strings will be printed out.

The strings will again be displayed and you can press ENTER to generate another random amount of strings after RAMTOP is again displayed. After generating 2 or more sets of strings, press the "R" key after the second display and all the strings will scroll on the screen.

What is happening is that each set is being POKED into memory (lines 190 to 270) and the end memory location is being poked into memory (280 to 310). Each time the cycle repeats, the data is destroyed in the variables memory by lines 440 to 470.



CHRISTMAS SPECIALS

HAPPY HOLIDAYS
2 PROGRAMS

Here are two programs that give a moving graphics representation of the holiday spirit. The first version is for the 1000 series of computers and the second is for the TS-2068.

In the 2068 version, the graphics characters are entered in the following manner - press SHIFT "9" to get into the graphics mode (remember to press SHIFT "9" again to exit from the mode when not being used). Then press the following keys to get the proper graphic's character:

Santa's sleigh in the variable "a\$" in line #1000 is represented by the "b" key. The reindeer in the same variable are represented by the "e" key and the connecting lines by the "c" key.

Santa's sleigh in the variable "b\$" in line #1000 is represented by the "d" key. The reindeer in the same variable are represented by the "a" key and the connecting lines by the "c" key.

The trees in line #2010 are represented by the "f" key.

With a relatively small amount of programming lines, the 2068 version represents quite a sophisticated display.

TS-2068 VERSION

```

10 LET a$="": LET b$="": DIM c$(3
20 POK USR "e",BIN 00000101
30 POK USR "e",BIN 00000010
40 POK USR "e",BIN 00000001
50 POK USR "e",BIN 10000110
60 POK USR "e",BIN 11111111
70 POK USR "e",BIN 01111110
80 POK USR "e",BIN 01010101
90 POK USR "e",BIN 01010101
100 POK USR "e",BIN 10100000
110 POK USR "e",BIN 01000000
120 POK USR "e",BIN 01000000
130 POK USR "e",BIN 01000000
140 POK USR "e",BIN 01100001
150 POK USR "e",BIN 11111111
160 POK USR "e",BIN 01111110
170 POK USR "e",BIN 10101010
180 POK USR "e",BIN 10100000
190 POK USR "e",BIN 10110001
200 POK USR "e",BIN 10110001
210 POK USR "e",BIN 11111110
220 POK USR "e",BIN 11111100
230 POK USR "e",BIN 01000100
240 POK USR "e",BIN 01000100
250 POK USR "e",BIN 11111110
260 POK USR "e",BIN 00000000
270 POK USR "e",BIN 00000000
280 POK USR "e",BIN 00000000
290 POK USR "e",BIN 11111111
300 POK USR "e",BIN 00000000
310 POK USR "e",BIN 00000000
320 POK USR "e",BIN 00000000
330 POK USR "e",BIN 00000000
340 POK USR "e",BIN 00000000
350 POK USR "e",BIN 00000000
360 POK USR "e",BIN 00000000
370 POK USR "e",BIN 00000000
380 POK USR "e",BIN 00000000
390 POK USR "e",BIN 00000000
400 POK USR "e",BIN 00000101
410 POK USR "e",BIN 10001101
420 POK USR "e",BIN 10001101
430 POK USR "e",BIN 01111111
440 POK USR "e",BIN 00111111
450 POK USR "e",BIN 00100010
460 POK USR "e",BIN 00100010
470 POK USR "e",BIN 01111111
480 POK USR "e",BIN 00011000
490 POK USR "e",BIN 00011000
500 POK USR "e",BIN 00111100
510 POK USR "e",BIN 00111100
520 POK USR "e",BIN 00111100
530 POK USR "e",BIN 00111100
540 POK USR "e",BIN 00111100
550 POK USR "e",BIN 00011000
560 POK USR "e",BIN 00011000
570 POK USR "e",BIN 00011000
580 LET a$="":

```

```

1100 PAPER 0: BORDER 7: INK 7: C
1200 FOR n=1 TO 250: PRINT AT IN
T (22* $\text{RND}$ ),INT (32* $\text{RND}$ ):".": NEX
T n
2010 INK 4: FOR n=1 TO 50: PRINT
AT INT (RND*10)+8,INT (RND*21):
"▲": NEXT n: PRINT AT 9,25;"▲":A
T 13,27:"▲"
3000 INK 7: PLOT 0,10: DRAW 255,
10: PLOT 0,20: DRAW 255,10
3010 PLOT 193,35: DRAW 30,0: DRA
W 0,15: DRAW -15,10: DRAW -15,-1
0: DRAW 0,-15
3020 DRAW -20,30: DRAW 0,15: DRA
W 20,-30
3030 PLOT 173,80: DRAW 15,10: DR
AW 20,-30
3040 PLOT 169,90: DRAW 15,-10: D
RAW 20,-30
3050 PLOT 164,88: DRAW 0,8: DRAW
30,0: DRAW 0,-8
3060 PLOT 180,84: DRAW 0,16: DRA
W 5,-5

```


Local Stores Offer Delightful Gift Ideas

Famed showman Billy Rose once said that if he had only \$2 with which to buy his wife a present, he wouldn't try to buy something that looked like it was worth \$4 or \$5—he'd blow the whole \$2 on the best bar of soap he could find...a bar of soap that would make his wife feel like a queen when she took a bath. To this day, it's possible to get top quality gifts in whatever price range. Here, to help you get a head start on holiday shopping, are some hints from the handy Christmas Shopper section appearing in the December issue of Reader's Digest:

- Strip and julienne fruits and vegetables the easy way with the Dazey Stripper™. Also from Dazey are Chef's Pots™—cooker, fryer, steamer—and the Dazey Foot Saver™ Plus for a warm, wet massage.

- The ultimate in garage door opener systems is affordably priced this year—the All New Genie® TRAC DRIVE. It operates smoothly in any weather.

- The gift that's always sharp—the Wilkinson Sword® Self-Sharpening Knives.

- An impressive gift



choice for an Olympic fan is a Pentel Pen and Pencil Set. Pentel is the Official Licensed Pen and Pencil of the 1984 Olympics.

- To homemakers, an extremely helpful gift is Black & Decker's Dustbuster™, a powerful cordless vacuum.

- For the traveling teens in your life, American Tourister® luggage offers New Gorilla Bags. They're rugged duffels with plenty of room—for camping, skiing trips or spring breaks.

- Sweet memories of the holiday season can last through the year if you leave a Whitman's® Sampler under the tree. It's long been America's most popular gift box of quality chocolates.

- Stamp collectors are sure to welcome philatelic products from the U.S. Postal Service. There are kits on Outer Space, Sports and Science for the chil-

dren. For the serious collector, there's the 1983 Commemorative Mint Set and Postal Service Guide to U.S. Stamps.

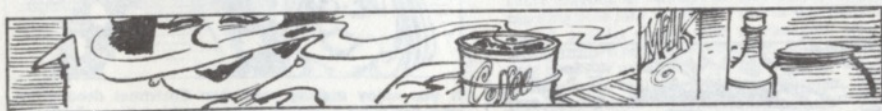
- In the spirit of the holiday season is a beautifully gift-packaged bottle of Amaretto di Saronno Originale 1525.

- For the first time you can see how your food looks as it cooks without even lifting a lid, thanks to New Visions® Top-of-Range Cookware from Corning. Microwave compatible, this see-through cookware can go directly from freezer to range top.

- Few pens write as smoothly as a Parker Arrow, Classic or Jotter, and few look as timelessly beautiful. Maybe you'll get a beautifully written letter of thanks.

- Holiday coiffeurs get star treatment with Clairol Custom CareSetters. Velvet smooth surfaces cover every roller to gently cushion hair.

- Capture those Christmas memories forever with the new Kodak Disc Camera. Just push the button and it reads the light, flashes if necessary, advances the film and flashes again in just one and a third seconds.



For stubborn refrigerator odors, place a coffee can filled with charcoal on a refrigerator shelf for several days. Repeat with fresh charcoal until odor is gone.



The average lead pencil will draw a line 35 miles long or write 50,000 words.

NEWS Of Education

Model Rocketry — The Space Age Teaching Aid

A hobby that's soaring to new heights of popularity these days, more than one million Americans agree, is model rocketry. What's more, model rocketry is also proving to be an amazingly effective space age teaching aid. Thousands of teachers make model rocketry a part of their curricula each year.

Model rockets are miniature flying counterparts of full-size rockets. Constructed primarily of lightweight balsa wood and paper tubing and powered by safe, pre-manufactured, solid-propellant engines, they demonstrate and use the same principles that govern the rockets at Cape Kennedy. After returning to earth by parachute or other recovery system, they need only a new rocket engine with igniter to be ready for another thrilling flight.

Numerous concepts in science and math become "real" through model rocketry. Actual models of historic military rockets or space research vehicles or up-coming spacecraft help create interest in social studies.

The growth of model rocketry was given a major launching by the development of the first solid propellant engine in 1958 by Estes Industries, today the world's largest maker of model rockets. Today's model rockets soar to thousands of feet at speeds which may be in excess of 400 miles



Model rocketry is blasting into the curricula at many schools these days.

per hour.

From simple beginner's kits that are easy to build and fly, the company's model rockets range all the way from accurate scale models of the rockets that paved the way for space exploration—Saturn V, Mercury-Redstone and the Space Shuttle Columbia—to highly imaginative ones that could be the forerunners of space vehicles of tomorrow, such as Stealth and Starship Nova, inspired by atomic propulsion research.

Now through December 31, 1983, Estes Industries will provide a special redemption coupon for a free Estes Mini-Space Shuttle Rocket Kit, with a retail purchase of \$15 or more in merchandise. It's redeemable direct from Estes Industries with proof-of-purchase receipt and kit name cut out from front of product panel or box.

IT'S A FACT!

The microwaves that cook food aren't too much different from the energy waves produced by a bass drum. The drum's energy waves are long sound waves... those from a microwave are short. Microwaves cook by causing the molecules in the food to vibrate, creating friction which produces heat.



Nothing on the fair and square! Think round when it comes to microwave cooking. Your most efficient choice is a tube pan... it allows the energy to penetrate the food from all directions.

Because microwaves must be absorbed by the foods to do the work of cooking, special cooking utensils are needed. Those available today made with Udel polysulfone are ideal for the job, according to Rita Marie Schneider, home economics consultant for Union Carbide Corporation. Udel's transparency to microwaves helps ensure more even cooking.



The blue whale can go up to half a year without eating—it's maintained by its blubber.



If you enjoy making your own Christmas decorations, why not make a wreath trimmed with lollipops? It's colorful and youngsters (of all ages) will thank you for this sweet holiday treat.



The Grand Canal in China is twenty times as long as the Panama Canal—yet it was built over 1300 years ago, without modern equipment.

When "R" is entered, the routine from line 500 to 760 again clears memory and PEEKs above RAMTOP to fetch the vital data and displays it to the screen in one merged file.

Work with this program and try to understand how the data is transferred back and forth in memory. It isn't that difficult to incorporate these techniques into your own programs, even after the data has been saved with the program.

A rule of thumb! Bring the data file programs in one at a time and never develop your routines to pull the data back to areas under RAMTOP until all the data has been POKED into memory above RAMTOP. This way when you finally do pull it back, as it fills up the variables memory area, it may overlap and destroy the data above RAMTOP. Since the bytes are being transferred on a one to one basis, it won't matter if the data above RAMTOP is destroyed as it is being overlapped since the earlier data has already been transferred to lower memory.

This way, you can have the most memory-efficient transfer allowing a maximum amount of data to be utilized and the only extra memory needed is for one month's file at a time and the space needed for the program routine. In other words, try to keep RAMTOP as low as possible.

Of course, it is best to start from scratch with the programs already having these routines in them - Class dismissed!



Children in Northern Europe believe that special elves in white beards and red caps come visiting at the Yuletide season. Children leave bowls of porridge outside the kitchen door for the elves and the porridge is always gone by morning.

powerful is its ability to "duplicate frames". It has a word processor format with a HELP menu that can be entered and exited at any time. Up to 10 "pixures" can be drawn and instantly reviewed or edited at any time. Have you ever noticed how comic strip cartoons may have pretty much the same basic outline with changes in only a few areas such as partial movement of characters or different messages? The cartoon on the cover of this magazine was drawn with "PIXURE".

Here is a set of programs that will keep you busy for quite some time and give the user quite a bit of insight into how the computer uses 0s and 1s to store information. It also has a practical aspect in that it has value for creating custom drawings or logo to be used for printed material.

PIXIE is priced at 24.95 (25% discount to subscribers) and is available NOW!

Don't miss this one if you want to get into high resolution graphics.

Great Ideas For Holiday Stocking Stuffers

Stumped when it comes to suitable stocking stuffers for your favorite friends and family members this holiday season? Here are some ideas that may help.

Stocking stuffers can be inexpensive, yet innovative. For the children, hand-made mittens, dolls or small stuffed animals make special gifts. If you have a budding artist in the family, slip some crayons or felt-tipped marking pens into the stocking. A popular choice with bookworms is small-size picture books or paperbacks on their favorite subjects or by favorite authors.

If there's a young couple just setting up housekeeping on your Christmas list, there are many handy household items you can stuff a stocking with—utensil sets, miniature tool kits, potholders, trivets and other decorative items.

Scented soaps, colognes and perfumes are always welcomed on Christmas morning. And who says berry to apple. They are a stocking stuffers have to tasteful way to say "Have cost less than other gifts? a merry Christmas and a Imagine the delight on the happy New Year."



face of a young lady as she shakes out the stocking and a diamond necklace, earrings or a watch spills into her lap!

Delicious, small-serving sizes of gourmet treats also make unique stocking stuffers—special cheeses, meats, pastries, cookies— all beautifully wrapped and ready for Yuletide palates. Among the scrumptious snacks you might choose to stuff a stocking with are granola snacks from Nature Valley, available in a variety of flavors from chocolate to peanut butter, raspberry. And who says berry to apple. They are a stocking stuffers have to tasteful way to say "Have cost less than other gifts? a merry Christmas and a Imagine the delight on the happy New Year."

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```

3070 PLOT 180,102: DRAW 8,0: DRA
W 4,-8
3075 REM GO TO 3200
3080 FOR n=195 TO 221: FOR i=35
TO 49
3100 IF n>210 AND n<215 AND i<44
AND i>37 THEN GO TO 3120
3110 PLOT n,i
3120 NEXT i: NEXT n
3130 LET a=50: FOR n=196 TO 208:
FOR i=50 TO a
3150 PLOT n,i
3160 NEXT i: LET a=a+.7: NEXT n
3170 LET a=58: FOR n=209 TO 220:
FOR i=a TO 49 STEP -.1
3180 PLOT n,i
3190 NEXT i: LET a=a-.7: NEXT n
3200 FOR j=1 TO 2: LET i=52: FOR
n=194 TO 176 STEP -.1
3210 PLOT n,i: DRAW 12,10
3220 LET i=i+.5: NEXT n
3230 LET i=59: FOR n=209 TO 189
STEP -.1
3240 PLOT n,i: DRAW 15,-8
3250 LET i=i+1.5: NEXT n
3260 NEXT j
3270 PLOT 192,38: LET a=38: FOR
n=192 TO 173 STEP -.1: PLOT n,a:
DRAW 0,10: LET a=a+1.5: NEXT n
3300 FOR n=1 TO 64
3310 PRINT AT 3,0; a$( TO 32)
3320 LET a$a$(64)+a$( TO 63)
3330 PAUSE 20: NEXT n
3340 GO SUB 4000
3350 FOR n=1 TO 64
3360 PRINT AT 8,0; b$( TO 32)
3370 LET b$b$(2 TO 64)+b$(1)
3380 PAUSE 10: NEXT n
3390 GO SUB 4000
3400 GO TO 3300
4000 GO SUB 4005: GO SUB 4050: G
O SUB 4005: GO TO 5100
4005 GO SUB 5050: PAUSE 20: GO S
UB 5050: PAUSE 20
4010 BEEP .25,10: BEEP .25,13: B
EEP .27,6: BEEP .25,8: BEEP .75,
10: PAUSE 30
4030 BEEP .25,11: BEEP .25,11: B
EEP .25,11: BEEP .1,11: BEEP .1,
11: BEEP .25,11: BEEP .25,10: BE
EP .25,10
4040 BEEP .1,10: BEEP .1,10: BEE
P .25,10
4045 RETURN
4050 BEEP .25,8: BEEP .25,8: BEE
P .25,10: BEEP .5,8: BEEP .5,13
4055 RETURN
4060 STOP
5050 FOR n=1 TO 3: BEEP .25,10:
NEXT n: RETURN
5100 BEEP .25,13: BEEP .25,11: B
EEP .25,8: BEEP .1,8
5110 PAUSE 50: RETURN

```

TS-1000 VERSION

```

10 LET X=PEEK 16396+256*PEEK 1
6397
20 FOR N=1 TO 176
30 PRINT " ";
40 NEXT N
50 FOR N=727 TO 791
60 IF N/33=INT (N/33) THEN GOT
O 80
70 POKE X+N,128
80 NEXT N
90 GOTO 1000

```

```

500 POKE X+601,180
510 POKE X+634,2
520 POKE X+635,152
530 POKE X+667,133
540 POKE X+700,0
550 POKE X+733,2
560 POKE X+568,150
570 POKE X+604,180
580 POKE X+637,2
590 POKE X+638,152
600 POKE X+670,133
610 POKE X+703,0
620 POKE X+736,2
630 POKE X+571,150
640 POKE X+607,180
650 POKE X+640,2
660 POKE X+641,152
670 POKE X+673,133
680 POKE X+706,0
690 POKE X+739,2
700 POKE X+574,150
800 PRINT AT 21,20; " "; AT
20,20; " "; AT 19,20; " "; AT
310 PRINT AT 18,20; " "; AT
17,21; " "; AT 16,22; " "; AT
15,23; " "
820 POKE X+90,151
830 RETURN
1000 GOSUB 500
1010 LET Y=INT (RAND*791)+1
1020 IF Y/33=INT (Y/33) THEN GOT
O 1010
1030 POKE X+Y,155
1040 GOTO 1000

```

BONUS 1000 VERSION - enter first line items in reverse order using back arrow

```

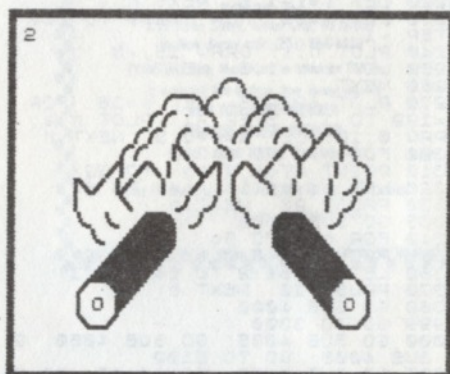
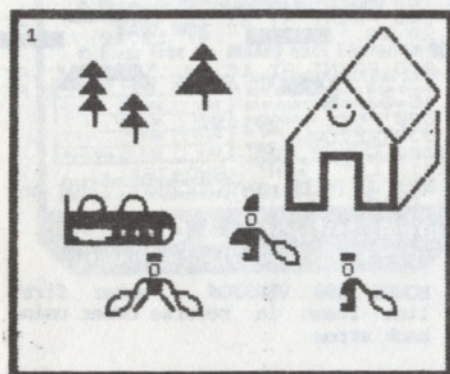
1 REM Y: NOT $TAB $AND $TAB
$RANDTAN
2 FAST
3 RAND USR 16514
4 POKE 16418,0
5 PRINT AT 22,0; " "
6 SLOW
10 LET A$=" "
20 LET B$=A$+" "
30 LET C$=A$+" "
40 LET D$=A$+" "
50 FOR N=1 TO 20
60 LET X=INT (RAND*20)
70 LET Y=INT (RAND*30)
80 PRINT AT X,Y; " "; AT X+1,Y;
" "; AT X+2,Y+1; " "
90 NEXT N
100 PRINT AT 10,0; B$( TO 32); AT
11,0; C$( TO 32); AT 12,0; D$( TO
32); AT 4,8; "MERRY CHRISTMAS"; AT
18,8; "HAPPY NEW YEAR"; AT 4,8; "
MERRY CHRISTMAS"; AT 18,8; "HAPPY NE
W YEAR"
110 LET X=INT (RAND*44)
120 LET Y=INT (RAND*64)
130 UNPLOT Y,X
200 LET B$=B$(2 TO LEN B$)+B$(1)
210 LET C$=C$(2 TO LEN C$)+C$(1)
220 LET D$=D$(2 TO LEN D$)+D$(1)
300 GOTO 100

```

INSERT A B C D E F G H

[illegible]

Enter letter coordinate?



Very rarely do we do a review on a really exiting new program. PIXIE is to the TS-2068 what SPRITE graphics are to the Commodore 64. It is a machine language graphic editor written in BASIC.

It is a very simple program to understand and use. The 2068 has a area in RAM in which the ROM introduces 21 pseudo-characters into form A to U. You can change these characters into your own design by poking different values into these RAM locations. It is a very tedious

PIXIE
Picture
Drawing
Program

PIXURE

written by
Gene Buza

and time-consuming job. The "SKULL-SHOT" program designs one custom character and requires eight program lines to do it.

PIXIE starts off by asking you which character you want to replace. Now this custom character is not going to replace the normal upper or lower case character. If you were to put the computer into the "graphics mode" and then hold the CAPS SHIFT key down and press a letter from A to U, you would see the upper case representation of that letter. Once PIXIE changes it into your custom designed character, repeating that process will display your custom character (look at the grid in the upper-left hand corner of this page and observe the blocked-out coordinates - now look at the letter (A) and the character to the right of it - this is how that character

will enter when in the graphics mode).

How does it work? A prompt appears asking you to press ENTER to start. If you enter "standard" at this point, the characters that will be displayed will be the standard upper case characters that already are assigned to the user/defined character area. If, instead, you just press ENTER, you will see 21 custom characters that were designed for this program.

A prompt will then appear, asking you which one you want to change. You enter a lower case letter for the this prompt. An 8 by 8 grid will then appear on the screen (see figure 1). This grid represents the pixel coordinates of the pixie you are going to create or change. A pause occurs as the program designs the present pixels assigned to that character. If a character has already been designed, its pixel coordinates will be represented in the grid and you can edit them, if you wish. A prompt appears at the bottom of the screen that asks which column (up to down) designated by a letter that you want a pixel to appear in.

At this point, you have the option of doing six things:

1 - Entering a "z" will fill all the pixels with black.

2 - Entering a "zz" will fill all the pixels with white.

3 - Entering a "0" will "white out" any pixel coordinates entered from that point on with "DELETE" flashing in the upper left hand corner of the screen.

4 - Entering a "1" will "black out" any pixel coordinates entered from that point on with "INSERT" flashing in the upper left hand corner of the screen. This is the mode the program starts with.

5 - Just pressing the RETURN key will exit that mode and create the character in memory and ask you if

you want to exit the program or create or change a character.

6 - Entering the actual letter of the column you want the pixel to be black or white, depending on which mode you are in.

After the column letter is entered, a prompt appears asking for the number of the row in that column you want the pixel to be black or white.

If a black pixel was entered, the appropriate grid coordinate will receive a black block. If a white pixel was entered, the grid coordinate will have the black block removed, if it exists.

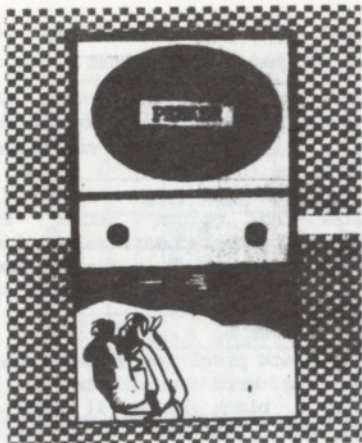
Each time a new character is designed, it appears on the list on the screen. Print-out of the list is provided for reference.

The program can clear itself, if you like, and you can start from scratch. Instructions are given on how to use the characters directly or with the CHR\$ function in your own programs and how to save them with your programs.

After you have created the custom characters you want, you can write or merge a new program with PIXIE. You then just delete all the PIXIE program lines except for two lines that will be kept with your program. One stores the pixel data in numeric variables with your program when it's saved on tape. The other POKES the pixel information into RAM after your program is loaded so that your custom characters are ready to be used.

A second very powerful program also comes on the tape called "PIXURE". This program allows the user to use the custom created characters on the screen along with other graphic, upper/lower case or numeric characters. It is theoretically possible to draw anything to the screen and have it printed out to the TS-2040 printer.

What makes this program so



- PROGRAMS TO EXAMINE MEMORY

Here are two short programs that allow you to examine the ROM and RAM memory locations of the 1000 and 2000 series computers. They start by asking you for the STARTING ADDRESS and then display the contents of that memory location and the next 21 locations.

The left column represents the address in decimal, the middle column represents the CODE number residing in that address and the right column represents the character that the CODE represents. If the CODE falls into an area that does not define a character or keyboard command or function, the right column will receive a blank space, otherwise the program might bomb.

The memory addresses start with ROM routines, then RAM information that is directed by ROM. This is followed by the program in memory. Then comes the screen memory map and finally the variables.

If you are scanning the screen or variables area, you may notice that the CODE character may not coincide with the CODE number. This is because it has changed in the small time that it took to write them onto the screen.

Attach this program to a program you have and scan the program memory area to see exactly how BASIC interprets a listing. The program lines are after the CODE for ENTER (118 on the 1000 and 13 on the 2068). Make sure you renumber it so that it doesn't interfere with existing program lines.

TS-1000 VERSION

```

10 SLOW
100 CLS
110 INPUT " INPUT STARTING ADDR
ESS : ";S
120 INPUT SA
130 FAST
140 LET A=0
150 LET S=SA
160 SCROLL
170 PRINT S;TAB 8;PEEK S;TAB 16
;
180 IF PEEK S<67 OR PEEK S>128
AND PEEK S<>195 THEN PRINT CHR$
PEEK S
190 LET A=A+1
200 LET S=S+1
210 IF A=22 THEN GOTO 300
220 GOTO 150
300 PAUSE 40000
310 CLS
320 LET A=0
330 GOTO 160

```

TS-2068 VERSION

```

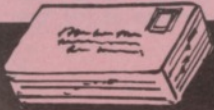
100 CLS
110 INPUT " INPUT STARTING ADDR
ESS : ";SA
120 LET A=0: LET S=SA
130 PRINT S;TAB 8;PEEK S;TAB 16
;
140 IF PEEK S<33 THEN PRINT : G
O TO 160
150 PRINT CHR$ PEEK S
160 LET A=A+1: LET S=S+1
170 GO TO 130

```



The most common name in the world is Muhammad.

Letters To The Editor



Dear Ed,

Do You have any info on the SUN organization (Sinclair Users' Network) in Palatine, IL? No phone or written communications seem possible.

On self-starting programs, as you have, is it possible to get a listing from that program?

Sincerely,
Heinz Zuschlag - Trumbull, CT

Dear Heinz,

The SUN newsletter, I'm sorry to say, is no longer being published - a victim of the sad situation regarding the TS-1000 market. That's all the information I have at this time.

Self-running BASIC programs can be broken and listed the same way a normal BASIC program can. We have mentioned the method in earlier issues but it bears repeating. The simplest method involves adding 2 lines to your program such as:

```
9998 SAVE "PROGRAM"  
9999 RUN
```

or

```
9999 GOTO line number
```

The second method allows variables to be stored with the program. Make sure the line number you designate doesn't encounter and LET or DIM statements that will destroy the variables the program was saved with.

Now, to get the program to self-run after loading, SAVE it by entering "GOTO 9998". This saves the program on tape and then executes it. When the program is re-loaded from tape, it automatically goes to line 9999.

The TS-2068 is an entirely different story. It is possible to write programs in BASIC that cannot be broken or listed. Programmers who catch on to the techniques can pretty much assure themselves of having a good deal of author protection - Ed.

Dear Ed,

I have just become the proud owner of a 2068 computer. I'm very pleased with it but am very anxious to find out how to utilize the other 3 screens. User defined graphics are going to be very handy; the higher resolution certainly improves graphics.

Unfortunately, I have a Mindware MW-100 printer, which is not compatible with the 2068. I called Mindware and they offered no solution. If anyone has one, I'd like to know what it is.

I still use my TS-1000; it has an add-on keyboard and has a UHF modulator installed so it's very easy to use. I also have a Winky Board which is fantastic. I thought some of my early software was gone forever, but it's loadable with the Winky.

I would like to see more about the 2068 in your magazine.

Sincerely, Marilyn Busby - Katy, TX

Dear Marilyn,

The little information we have on the 3 screen mode is covered in appendix C of the manual starting on page 247. Try this program and see what displays on the screen.

```

10 FOR n=0 TO 255
20 OUT 255,n
30 CLS
40 FOR i=1 TO 704
50 PRINT " ";
60 NEXT i
70 NEXT n

```

I know a hi-res monitor will improve the clarity and it even says on the box that the 2068 comes in that it has 80 column format (lower left corner/front). We don't have a high-res monitor but I believe that when one is plugged into the monitor jack, the display will be formatted properly.

The PIXIE character editor package (see review this month) is an exiting tool that exploits the full high-resolution character graphics capability of the 2068.

The Mindware printer is designed to use the Sinclair code of the ZX-81 or TS-1000. The 2068 uses ASCII code which is completely different. The 2040 printer can operate on all T/S computers. We don't believe you can use the MW-100 without internal modifications to the printer - Ed.

Dear Ed,

In response to your question concerning articles, etc. regarding the 2000/1000, I would hope that you would start IMMEDIATELY with tips & programs for the 2000 on maybe a 50-50 basis and within a few months up it to 75/25. I don't think you ought to phase out the 1000 entirely. I know I'll be using both of my machines for a long time to come. I have an awful lot of information on cassettes that I doubt if I will convert to my 2000. Tips, ideas and programming techniques are what are needed right now, though, for the 2000 (or for that matter, for my 1000 or ZX-81).

I sure enjoy just messing around. I am retired and got into computing out of curiosity. It kept my water from freezing in my brain. I recommend it highly to retirees as a

great hobby.

P.S. I buy Hewlett-Packard paper (82954A) in 400' rolls for my 2040 printer and made a frame and dust cover. It works great and is cheaper, too, if you price it by the foot.

George G. Cary - Coloma, CA

Dear George,

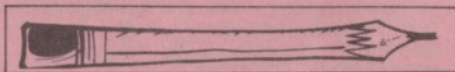
Your thoughts, regarding magazine content, pretty much reflect those of the majority. I still stand fast in my opinion that this is the "peoples' computer".

As stated in last month's issue, we will be phasing out the magazine/cassette concept of Synchro-Sette (last issue - Oct. 84). We will definitely supply software for all the Timex computers along with other popular computers such as the Commodore 64.

We may come out with a newsletter containing a lot of the Synchro-Sette format for all the popular computers we support with software, the theme being programs, computer awareness education and news/gossip. We are not sure if this idea is marketable. We might just send out a quarterly publication to any purchaser within the previous 6 months as a freebie and hope that the revenue generated from the software sales of items contained would contain the expense and also send an update sheet with any new order.

Times are surely lean in the Timex/supporter market as evidenced by almost every supporting company, including ourselves.

I would like to hear anyone's opinions on what they feel the market should provide - Ed.



The average lead pencil will draw a line 35 miles long.